

REMARKS

Claims 1-17, 19-24, 26 and 27 are pending in the present Application with claims 1-4, 6-10, 12-15, 19-21, 23, 24, and 26 being rejected. Claims 5, 11, 16, 17, and 22 are objected to as being dependent on a rejected claim. Applicant acknowledges that claims 5, 11, 16, 17, and 22 would be allowable in rewritten in independent form to include all the limitations of the base claim and any intervening claim. However, Applicant believes the base claims (1 and 20) are in allowable form as previously presented and therefore the dependent claims have not been rewritten.

Pursuant to the Examiner's request, Applicant submits drawing sheets and amends to the specification to reference the added figures. Applicant notes the content in the figures is supported by the specification as filed and therefore does not include new matter.

Claims 8 and 9 stand rejected under 35 U.S.C. § 112, first paragraph for failing to comply with the enablement requirement. Specifically, the Examiner asserts that "the vector determines the duty cycle of the transmission modes that are scheduled" is not sufficiently defined in the specification. However, this feature is properly described and defined. In particular, the specification shows that in an optimal policy schedule having certain preconditions, there is a guaranteed existence of a weight vector such that two particular equations are satisfied (Page 12, Lines 7-14). Solving these equations leads to the determination of the duty cycles. This is shown in the specification which states that "[o]nce such a set of transmission modes is identified, a set of linear equations can be solved to identify the duty cycles of each transmission mode in the set." (Page 13, Line 26). Therefore, the specification disclosed how a vector can be used to determine the duty cycle of the transmission modes. As such, the specification enables one of ordinary skill in the art to employ this recited feature.

Claims 1-4 and 15 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Attar et al. (U.S. Patent Application No. 2004/0038697). Applicant respectfully traverses this rejection.

Attar does not disclose or suggest at least the feature of “for each possible transmission mode, identifying a signal to interference plus noise ratio based upon the measured channel parameters” as described in claim 1. The Examiner cites Paragraph 40 of cited reference Attar for showing this feature. However, Attar merely describes determining a “list of access points capable of communication with the access terminal.” Attar then discloses that when an access point is found, the access terminal “calculates a quality metric of the access point’s forward link, which may comprise a signal-to-interference-and-noise ratio.” Attar, however makes no reference to identifying a signal-to-interference-and-noise ratio *for each possible transmission mode*. As described in the present application, the claimed method for scheduling communications considers changing parameters based on each possible transmission mode. (See, e.g., Page 26, Line 18 – Page 27, Line 9). This feature is not taught or suggested by Attar.

Therefore, it is respectfully requested that the 35 U.S.C. § 102(e) rejection of claim 1 be withdrawn. Further, since claims 2-4 and 15 depend from claim 1, it is respectfully requested that corresponding rejections to the dependent claims also be withdrawn.

Claim 19 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Agee et al. (U.S. Patent Application No. 2004/0095907). Applicant respectfully traverses this rejection.

Agee does not disclose or suggest at least the feature of “determining a set of transmission modes, each transmission mode in specifying a state of operation for links of the network, said step of determining being conducted by minimizing a weighted sum of expended

transmission power across the links of said network in view of the channel parameters measured in said step of measuring, such that each link in the network achieves a predetermined minimum data rate” as described in claim 19. Indeed, Agee merely discloses “redundantly transmitting multiple data modes...over multiple antennas” (Paragraph 0071). However, no particular set of modes is determined by minimizing any parameter. In the present invention, the set of transmission modes is determined by minimizing a parameter, namely a weighted sum of expended transmission power. Therefore, it is respectfully requested that the 35 U.S.C. § 102(e) rejection of claim 19 be withdrawn.

Claims 20, 21, 23, 24 and 26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Zourntos et al. (U.S. Patent Application No. 2003/0100343). Applicant respectfully traverses this rejection.

Zourntos does not disclose or suggest at least the feature of “determining a traffic matrix that specifies the rate of information transport between each pair of nodes in the network” as described in claim 20. The Examiner cites Zourntos Paragraph 289 as disclosing this feature. However, this section refers to a table that specifies the “beamforming weight sets required [for the router] to communicate with each of the associated nodes.” The matrix described in claim 20 contains data about the information transport rate between a pair of nodes in the network and has nothing to do with beamforming between a router and a node. Further, since Zourntos does not disclose a traffic matrix as described above, the reference also fails to disclose the step of “setting an initial routing of traffic on said links of the network in order to support the traffic matrix determined in said step of determining a traffic matrix.”

The Zourntos reference also fails to disclose the step of “computing a sensitivity of links in response to change of data rate” as recited in a claim 20. The Examiner cites sections of Zourntos which discloses the specification of data rates for individual nodes. While Zourntos does disclose such data, there is no computation of a sensitivity of links indicator, which provides information on the degree to which a particular change of data rate affects the link. Therefore, this feature recited in claim 20, is not taught or suggested by Zourntos.

Finally, Zourntos fails to disclose the step of “iteratively adjusting the routing of traffic using the sensitivity of links so that the weighted sum of expended transmission power across the links of the network is reduced” as recited in claim 20. Zourntos discloses the adjustments of the “RF transmit power of various nodes in the network” (Paragraph 0257). However, while Zourntos discloses the adjustment of power, it does not disclose the adjustment of the actual routing of traffic using sensitivity links as recited in claim 20.

For all of the above reasons, it is respectfully requested that the 35 U.S.C. § 102(e) rejection of claim 20 be withdrawn. Further, since claims 21, 23, and 24 depend from claim 20, it is respectfully requested that corresponding rejections to the dependent claims also be withdrawn.

With respect to claim 26, Applicant has made a minor amendment to correct a clear grammatical error and further submits that Zourntos fails to disclose the feature of “determining a set of transmission modes...with the object of one of minimizing numerical value determined by power expended on links of the wireless communication network, such that prespecified data rates on links of said network can be achieved by use of the set of transmission modes, or maximizing a weighted sum of data rates across the links of said network, and such that the power consumed by each transmitter is no greater than a predetermined maximum value” as recited in amended claim

26. Thus, in the present invention, one object of determining a set of transmission modes is to minimize power while maintaining a certain data rate. Zourntos however, sets forth the object of minimizing power subject to a minimum signal-to-interference-plus-noise ratio (not a data rate). In claim 26, the second object of determining a set of transmission modes is to maximize the data rate while maintaining a certain level of power. Zourntos however, sets forth the object of maximizing the data rate subject to a minimum signal-to-interference-plus-noise ratio (again, not subject to a data rate). Therefore, it is respectfully requested that the 35 U.S.C. § 102(e) rejection of claim 1 be withdrawn.

Claims 3-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Attar in view of Agee. Since claims 3-6 depend from claim 1 and the rejection of claim 1 has been overcome, it is respectfully requested that corresponding rejections to the dependent claims also be withdrawn.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Attar in view of Amadon (U.S. Pat. No. 7,020,147). Since claim 10 depends from claim 1 and the rejection of claim 1 has been overcome, it is respectfully requested that corresponding rejection to claim 10 also be withdrawn.

Claims 12-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Attar in view of Ogier (U.S. Application No. 2003/0095504). Since claims 12-14 depend from claim 1 and the rejection of claim 1 has been overcome, it is respectfully requested that corresponding rejections to the dependent claims also be withdrawn.

Claim 27 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zourntos in view of Agee. Since claim 27 depends from claim 26 and the rejection of claim 26 has

been overcome, it is respectfully requested that corresponding rejection to claim 27 also be withdrawn.

For all of the above reasons, Applicant requests reconsideration and allowance of the claimed invention. The Examiner should contact Applicant's undersigned attorney if a telephone conference would expedite prosecution.

Respectfully submitted,

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